

***Jaltomata spooneri* (Solanaceae): A new species of Southern Peru**

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ABSTRACT

A new species having edible fruit, *Jaltomata spooneri* Mione & S. Leiva (Solanaceae), is described from Peru, Departments Puno and Cuzco, and shown in photographs. Flowers are protogynous and stamens elongate after the flower opens. *Jaltomata spooneri* is similar to *J. contumacesis* S. Leiva & Mione, *J. sanchez-vegae*, S. Leiva & Mione and *J. yacheri* Mione & S. Leiva, also restricted to Peru. Differences among these species are shown in a table. www.phytologia.org *Phytologia* 95(2): 167-171 (May 1, 2013).

KEY WORDS: Andes, Cuzco, edible fruit, *Jaltomata spooneri*, Peru, Puno, Solanaceae

This paper is a contribution to ongoing taxonomic studies of the genus *Jaltomata* (Mione et al., 2007; Leiva, et al., 2010; Mione et al., 2011). During fieldwork in 2010 we collected the following new species.

JALTOMATA SPOONERI Mione & S. Leiva sp. nov. TYPE: PERU. PUNO. Prov. Sandia, Patambuco 14° 21' 41.5" S, 69° 37' 18.4" W, 3,600 m, 9 Jan 2010, T. Mione, S. Leiva G. & L. Yacher et al. 799 (holotype: HUSA; isotypes: F, NY). Figures 1- 5.

Shrub to 2 m high; young axes green, angular, sparsely hairy with dendritic and uniseriate unbranched (finger) hairs, some gland-tipped; older stems woody, terete, with lenticels. Leaves alternate, often geminate, the blade papyraceous, to 8.6 X 11.7 cm long, lanceolate or ovate with the apex acuminate, minutely pubescent on both faces, the hairs simple and / or dendritic, the margin entire to somewhat repand, ciliate; petiole to 2.7 cm. Inflorescence axillary, 2-(3) flowered and fruited; peduncle to 15 mm, terete, green; pedicel 7—20 mm, green, with 5 raised longitudinal ridges. Calyx green, rotate during anthesis (Figures 1 & 3), to 23 mm across, the lobes triangular, adaxially glabrous, abaxially with a mixture of gland-tipped finger and forked hairs; calyx with immature fruit to 25 mm across (Figure 3). Corolla urceolate-tubular with a broad, recurved 10-lobed limb, light-green to whitish, 1.5—2.0 cm long, abaxially sparsely pubescent with finger hairs occasionally gland-tipped, the limb 2.5 cm across, with 5 cream-green, narrowly triangular lobes alternating with 5 lighter lobules, the margin ciliate (Figure 1). Stamens to 27 mm, the filaments unpigmented, glabrous, elongating while flower is open; anthers 2.1 — 2.7 mm when dehisced and pressed, mucronulate, exerted beyond the mouth of the corolla. Radial expansions of the bases of the stamens, adnate to the corolla, create nectar troughs between the radial expansions (Figure 2). Pollen grains 33 — 38 µm diameter (n = 18 grains, mean 35 µm), 92,500 — 109,000 per androecium (n = 2 flowers). Style 26—28 mm (Figure 3), pale green; stigma capitate, bilobed (sometimes obscured by pressing), darker green than style, exerted 0 — 2 mm beyond the dehisced anthers; gynoecium glabrous, the disk girdling the base of the ovary (Figure 4), the nectar

translucent. Berries subspherical (Figure 3), most likely orange, and to 13 mm across on herbarium specimens; seeds light brown, sub-reniform to sub-orbicular.

Specimens Examined. **PERU. CUZCO: Prov. Quispicanchi**, Marcapata, 15-16 Feb 1929, *Weberbauer* 7789 (NY, US); 3,100 m, 7 Dec 1962, *Vargas C. 14039* (CUZ); **PUNO: Prov. Carabaya**, 3,425 m, 31 Dec 1947, *Vargas C. 6978* (CUZ, US); 2,800 m, 17 Feb 1983, *Ochoa & Salas 15075* (US); 3,300-3,700 m, 5 Mar 2004, *Ortiz V. et al. 5* (HUSA); 3,300-3,500 m, 6 Mar 2004, *Vilca C. et al. 45* (HUSA); La Escalera / Kana, 3,598 m, 10 Jan 2010, *Mione et al. 800* (F), *Leiva G. et al. 4656* (HAO); **Prov. Macusani**, road from Ollachea to Macusani, 13° 50' S, 70° 29' W, ca 3,200 m, “1.2.2000,” *Weigend 2000/100* (HUSA); **Prov. Sandia**, Limbani, 3,000 m, 22 Nov 1938, *Vargas C. 1299* (CUZ, MO); 3,400 m, 21 Nov 1938, *Vargas 9654* (G); El camino de Machu Tticani a Patanbino, 3,300 m, 19 Feb 1983, *Ochoa & Salas 15085* (US); from Patambuco 3.6 km out of town to Escuela San Luis, ca 300 m from school along path to valley of Río Rumichaca, 14° 23' S, 69° 36' W, 3,500 m, 27 Feb 1998, *Spooner et al. 7402a* (herbarium of Thomas Mione); Same location and date as type collection, *Leiva G. et al. 4655* (HAO).

Discussion. *Jaltomata spooneri* grows in Peru, in the departments of Cuzco (province Quispicanchi) and Puno (provinces Carabaya, Macusani and Sandia). Specimens were collected between 2,800 and 3,700 m. The habitat was described by collectors as occurring close to fences, dwellings, hedges, roadsides, and rock walls near cultivated land or in cloud forest remnants. Flowers are apparently protogynous, and stamens elongate after the flower opens: on the same plant we saw open flowers having undehisced anthers on shorter filaments, and flowers with dehisced anthers on longer filaments (Figure 1). In the population where the type specimen was collected the corolla is light-green to whitish, but in another population (*Mione et al. 800*) the corolla has purple longitudinal veins (Figure 3). The fruits are eaten by local people (Figure 5; *Vargas C. 1299*, *Vargas 9654*, *T. Mione et al. 800*). Local names are “Ahuaimantu” (*Vargas C. 1299*), “Aguaymantai” (*Vargas 9654*) and “Chilto” (type collection).

Jaltomata spooneri is most similar to *J. contumacensis* S. Leiva & Mione, *J. sanchez-vegae* S. Leiva & Mione and *J. yacheri* Mione & S. Leiva, also restricted to Peru. All of these shrubs have 2 — 3 or 2 — 4 flowers per inflorescence, green calyces, urceolate corollas, corolla limbs having lobes alternating with conspicuous lobules, radial thickenings (Figure 3), and yellow anthers. Differences among these species are listed in Table 1.

The specific epithet honors David M. Spooner for his repeated generous gifts of *Jaltomata* seeds and specimens to T. M. for study.

ACKNOWLEDGEMENTS

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Table 1. Comparison of *Jaltomata spooneri* with similar species.

	<i>J. contumacensis</i>	<i>J. sanchez-vegae</i>	<i>J. spooneri</i>	<i>J. yacheri</i>
Departments in Peru where found	Cajamarca	La Libertad Cajamarca	Puno Cuzco	Cajamarca
Elevation Range, m	2,500 – 3,000	3,000 – 3,550	2,800 – 3,700	3,460 – 3,515
Maximum plant height m	4	1.4	2	1.5
Density of hairs on young axes	Dense to sparse	Dense	Sparse	Dense
Hairs of young axes	Dendritic and some interspersed finger hairs, not-gland-tipped	Finger hairs, all gland-tipped	Dendritic, forked and finger hairs, some gland-tipped, most not	Dendritic hairs, not gland-tipped hairs
Corolla color	Green, sometimes with a purple base	Green with a purple base	Light-green to whitish, sometimes with purple longitudinal veins	Blue-purple
Corolla limb	Nearly rotate	Recurved	Recurved	Recurved
Nectar color	Usually clear, sometimes orange	Usually clear, turning orange	Clear	Clear
Filaments	Pubescent proximally	Pubescent proximally	Glabrous	Pubescent proximally
Length stamens exert beyond mouth of corolla after anthers dehisce, mm	8	15	14	14
Style length, mm	16	17 – 19	26 – 28	15 – 20



Figure 1. Flowers of *Jaltomata spooneri*, type collection. Note protogyny and filament elongation: the shorter stamens have undeveloped anthers while longer stamens have developed anthers. Holes in the bases of the corollas suggest nectar robbing (floral visitors not seen). The corolla is 1.5 to 2 cm long. Photo by Segundo Leiva G.

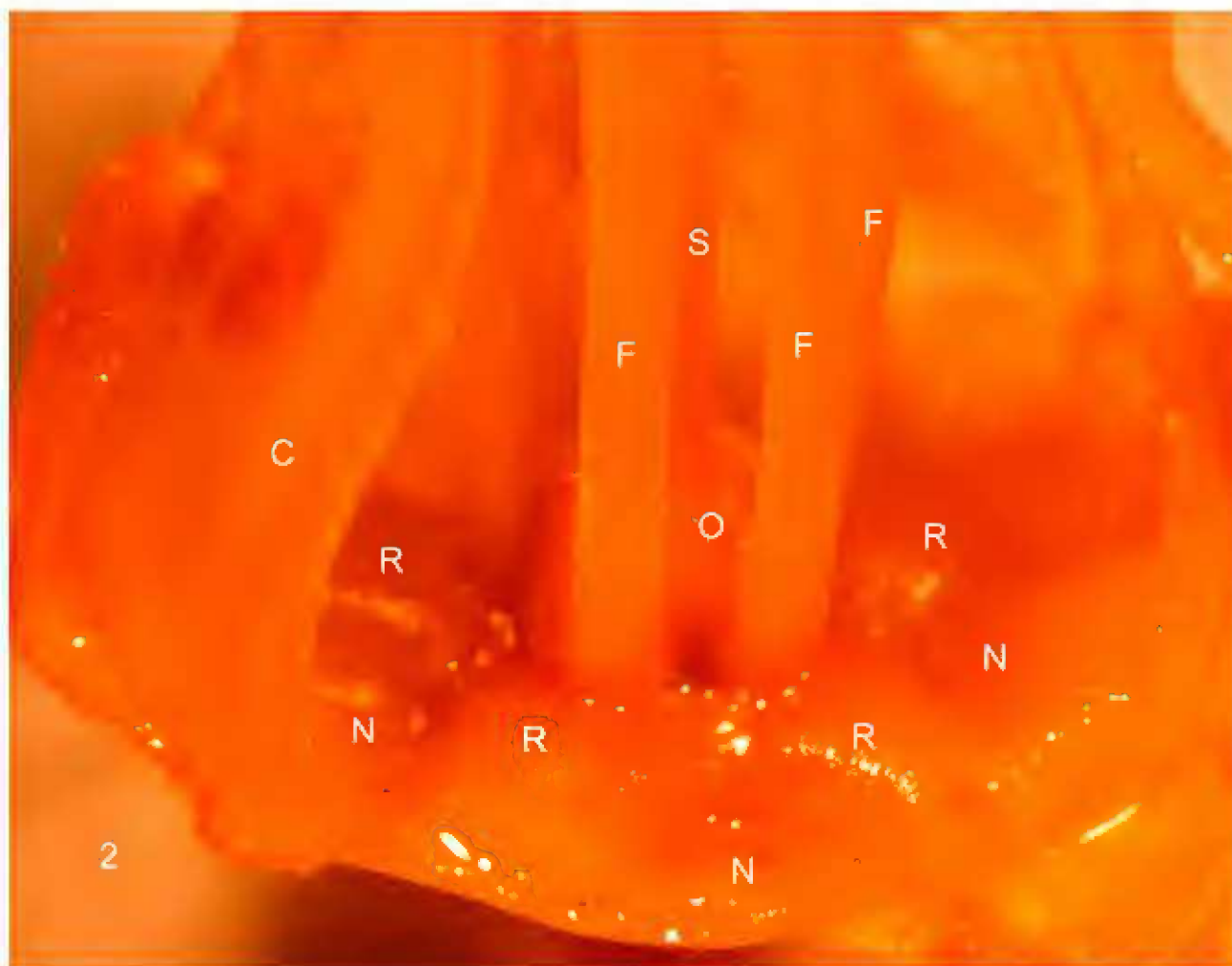


Figure 2. Flower dissected open to show: C, corolla; F, filament; N, nectar troughs between R, radial thickenings; O, ovary; S, style. Colors lost due to preservation in 70% ethanol; photo by Thomas Mione.



Figure 3. The corolla in this population differs from that of the type by having purple longitudinal veins, as seen in the flower on the left (anthers dehiscent). The style and the ovary of a flower can be seen because the corolla-androecium abscised. The fruits are unripe. *Mione et al.* 800; photo by Thomas Mione.

Figure 4. Ovary of flower dissected to reveal ovules (O) and ovarian disk (OD). Ovary 3 mm high X 3 mm diameter at base including ovarian disk. Colors lost due to preservation in 70% ethanol; photo by Thomas Mione.



Figure 5. *Jaltomata spooneri* held by local woman who told us that the fruits of this plant are eaten, “frutilla se comen.” *Mione et al.* 800; photo by Thomas Mione.